CLAIMS

1. A flip chip assembly, comprising:

(a) a dielectric substrate having a first and second opposite surface and a plurality of electrically conductive traces being formed on the first surface of said dielectric substrate;

(b) said dielectric substrate having a plurality of via apertures formed therein and each one of said traces being connected to a specific via hole with soldering material deposited on the side-wall of said via hole;

(c) a semiconductor device having a first surface and a plurality of input/output terminal pads with metal film formed thereon;

(d) the second surface of said substrate engages said semiconductor device and the via apertures of the said substrate are aligned with at least one of said terminal pads;

(e) an electrical continuity between said substrate and said semiconductor device is achieved by reflowing the pre-deposited solder in the via apertures, thereby connecting said substrate to said semiconductor device and forming an integral part in the flip chip assembly.

2. The flip chip assembly according to claim 1, wherein a dielectric portion of said dielectric substrate is made of plastic.

3. The flip chip assembly according to claim 1, wherein a dielectric portion of said dielectric substrate is made of a flexible film.

4. The flip chip assembly according to claim 1, wherein a dielectric portion of said dielectric substrate is made of ceramics.

5. The flip chip assembly according to claim 1, wherein the via apertures of said substrate are formed by at least one method of the group consisting of laser drilling, mechanical punching, plasma etching or chemical etching.

6. The flip chip assembly according to claim 1, wherein a soldering material in the via apertures is deposited by electrolytic plating.

7. The flip chip assembly according to claim 1, wherein a soldering material in the via apertures is deposited by meniscus coating.

8. The flip chip assembly according to claim 1, wherein a soldering material in the via apertures is deposited by wave soldering.

9. The flip chip assembly according to claim 1, wherein a soldering material in the via apertures is deposited by solder paste printing.

10. The flip chip assembly according to claim 1, wherein said semiconductor device is attached to said dielectric substrate with an adhesive film.

11. The flip chip assembly according to claim 1, wherein said semiconductor device is attached to said dielectric substrate with an adhesive paste.

12. The flip chip assembly according to claim 1, wherein said semiconductor device is attached to said dielectric substrate with clamps.

13. A flip chip assembly, comprising:

(a) a dielectric substrate having first and second opposite surfaces and a plurality of electrically conductive traces being formed on the first surface of the said dielectric substrate;

(b) said dielectric substrate having a plurality of via apertures and each of said traces are connected to a specific via aperture with a metallic film deposited on a side-wall of said via aperture;

(c) a semiconductor device having a first surface and a plurality of input/output terminal pads with soldering material formed thereon;

(d) the second surface of said substrate is engaged with said semiconductor

device, wherein the via apertures of said substrate are aligned with said terminal pads;

(e) an electrical continuity between said substrate and said semiconductor device is achieved by reflowing the pre-deposited solder on the terminal pads, thereby connecting said substrate to said semiconductor device through wetting on the via aperture side-wall and form an integral part in said flip chip assembly.

14. The flip chip assembly according to claim 13, wherein the metallic film is selected from the group consisting of copper, gold, nickel, titanium, and palladium.

add A1

add B1

add C1